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DATE MAILED: 02/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/664,395

Applicant(s)

BIEVENOUR ET AL.

Examiner

Arnel C. Lavarias

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2872

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/8/03, 12/5/03, 9/18/03.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 8-18 and 23-31 is/are rejected.
- 7) ☒ Claim(s) 7, 19-22 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 12/8/03, 12/5/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings were received on 9/18/03. These drawings are objected to for the following reason(s) as set forth below.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description:
Figure 14- Reference numeral 92.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

3. The abstract of the disclosure is objected to because of the following informalities:

Abstract, line 5- 'an' should read 'a'.

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Correction is required. See MPEP § 608.01(b).

4. The disclosure is objected to because of the following informalities:

Page 8, lines 10-12- the disclosure states that a second adjustable polarizer is located between the light source and the linear polarizer, however, Figure 2 does not specifically show this.

Page 8, line 24- '32a, 32b, and 32c' should read '36a, 36b, and 36c'

Page 13, line 14- '56' should read '96'

Page 13, line 24- '24and' should read '24 and'

Page 14, line 1- '106' should read '104'

Page 14, line 17- '24' should read '24a'

Page 14, line 17- '24a' should read 'P1'

Page 14, line 18- 'The rotated the' should read 'The rotated'.

Appropriate correction is required.

Claim Objections

5. Claims 19-22 are objected to because of the following informalities:

Claim 19, line 1- 'A' should read 'An' at the beginning of the line. Claims 20-22 are dependent on Claim 19, and hence inherit the deficiencies of Claim 19.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2, 6, 12, 23, 25-28, 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Shanks (U.S. Patent No. 4232948), of record.

Shanks discloses an optically active color filter (See for example Figure 1), comprising a rotatable, linear polarizer for polarizing light from a light source (See 1 in Figure 1; col. 2, lines 52-68); an optically active device for rotating the polarized light from the polarizer (See 3 in Figure 1; col. 2, lines 8-46); and an adjustable polarizer for selecting a desired color from the rotated polarized light from the optically active device (See 11 in Figure 1; col. 3, lines 10-28). Shanks additionally discloses that the linear polarizer may be a fixed-position linear polarizer (See col. 2, lines 8-68); the adjustable polarizer may be a first rotatable polarizer (See col. 3, lines 10-28); the optical activity of the optically active device is electrically controlled (See 3 in Figure 1; col. 2, line 8-col. 4, line 30); and one or both polarizers may be rotated through 180 degrees to generally provide a continually varying series of colors in the output (See col. 3, lines 10-28). Shanks further discloses a method for producing a colored light (See for example Figure 1), the method comprising polarizing light from a light source (See 1 in Figure 1; col. 2, lines 52-68); rotating the polarized light through an optically active substance (See 3 in Figure 1; col. 2, lines 8-46), such as liquid crystal (See 3, 6 in Figure 1); and selecting a

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desired color from the rotated polarized light by passing the rotated polarized through an adjustable polarizer (See 11 in Figure 1; col. 3, lines 10-28).

8. Claims 17-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Reznik et al. (U.S. Patent No. 5442468).

Reznik et al. discloses an optical active color filter (See for example Figures 3-4) comprising a first linear polarizer for polarizing light from the light source (See 400, 402 in Figure 4); an optical active device for rotating the polarized light from the linear polarizer (See 404 in Figure 4); and an electrically controlled polarizing assembly for selecting a desired color from the rotated polarized light from the optically active device (See 406, 407, 409, 410 in Figure 4); the polarizing assembly comprising a voltage-controlled liquid crystal panel (See 406, 409 in Figure 4) and a second linear polarizer (See 407, 410 in Figure 4).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks.

Shanks discloses the invention as set forth above in Claim 1, except for the optically active device comprising materials, such as a crystalline quartz optical rotator, corn syrup, or a sucrose solution. It would have been obvious to one having ordinary skill in

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the art at the time the invention was made to have the optically active device comprise materials, such as crystalline quartz optical rotator, corn syrup, or a sucrose solution, since it has been held to be within the ordinary skill of worker in the art to select a known material on the basis of its suitability of the intended use. One would have been motivated to have the optically active device comprise materials, such as crystalline quartz optical rotator, corn syrup, or a sucrose solution, since such materials are well known, optically active materials that are widely available and inexpensive, and additionally do not require an external voltage or current to operate. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks in view of Reznik et al.

Shanks discloses the invention as set forth above in Claims 1 and 6. Shanks lacks the color filter including a second rotatable polarizer disposed between the light source and linear polarizer. However, Reznik et al. teaches an apparatus for producing color effects (See for example Figures 1-4), wherein additional polarizers are utilized to control the color and brightness of the output light, and that such polarizers are similarly rotatable (See 402, 407, 410 in Figure 4; col. 2, line 57-col. 3, line 38; col. 5, line 35-col. 6, line 16). The polarizers are placed such that two polarizers may be located prior to an optically active device (See for example 402, 407 in Figure 4). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the color filter include a second rotatable polarizer disposed between the light source and linear polarizer, as taught by Reznik et al., in the filter of Shanks, to provide

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adjustment of color over the entire visible spectrum range available to the optically active device.

12. Claims 9, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks in view of Reznik et al.

Shanks discloses the invention as set forth above in Claims 1, 27, except for the thickness of the optically active device being adjustable. However, Reznik et al. teaches an apparatus for producing color effects (See for example Figures 1-4), wherein the thickness of the optically active device (See for example 104 in Figure 1; col. 2, line 57-col. 3, line 38) may be adjusted. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the thickness of the optically active device be adjustable, as taught by Reznik et al., in the filter of Shank, to allow filter operation in different spectral ranges, thus producing alternate colors based on the designed thickness of the optically active device.

13. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks in view of Reznik et al.

Shanks discloses the invention as set forth above in Claim 1, except for the optical active device comprising at least one removable optically active layer. However, Reznik et al. teaches an apparatus for producing color effects (See for example Figures 1-4), wherein the position of at least one optically active device (See for example 304B in Figure 3; col. 4, line 58-col. 5, line 23) may be adjusted. In particular, Reznik et al. teaches that in using multiple optically active devices in the filter (See 304A, 304B in Figure 3), continuously changing color effects may be produced by moving one of the

optically active devices with respect to the other. Although Reznik et al. does not specifically disclose that the movement of the at least one optically active device be such that it is removed from the optical beam path, such movement would be apparent to one of ordinary skill in the art, since removal of one or more of the optical active devices does provide a color effect that is different than when the one or more optically active devices are in the optical path. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the optical active device comprise at least one removable optically active layer, as taught by Reznik et al., in the color filter of Shanks, to provide more varied color effects to the light output by the color filter and to reduce wear-and-tear on the output polarizer since the output polarizer does not have to be rotated to produce the color effects.

14. Claims 13, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks in view of Reznik et al.

Shanks discloses the invention as set forth above in Claims 1 and 27, except for the thickness of the optically active device not being uniform. However, Reznik et al. teaches an apparatus for producing color effects (See for example Figures 1-4), wherein the surface of the optically active device (See for example 204 in Figure 1; col. 3, line 41-col. 4, line 55) may be heterogeneous. In particular, Reznik et al. teaches that the heterogeneous surface may be made by having a plurality of elements bonded together such that different thicknesses and/or orientations occur at various segments on the surface. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the thickness of the optically active device not

be uniform, as taught by Reznik et al., in the filter of Shank, to allow filter operation with a plurality of selected colors at different segments, thus producing alternate colors based on the particular segment thickness of the optically active device.

15. Claims 14-16, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shanks in view of Carmichael et al. (WO01/50187 A1).

Shanks discloses the invention as set forth above in Claims 1, 23, except for the color filter being controlled by an electronic wireless remote control device. However, Carmichael et al. teaches a tunable liquid crystal optical filter for producing various color effects (See for example Figure 3-8, 18-19), wherein the various liquid crystal panels in the color filter are controlled by a receiver detecting signals from a remote transmitter (See 28, 1 in Figures 18-19; Page 15, lines 11-37). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the color filter of Shanks, be controlled by an electronic wireless remote control device, as taught by Carmichael et al., to reduce the size of the filter and system to which the filter is attached, thus allowing the apparatus to be self-contained.

Allowable Subject Matter

16. Claims 19-22 would be allowable if rewritten or amended to overcome objections to the claims as set forth above in this Office action.
17. Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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18. The following is a statement of reasons for the indication of allowable subject matter:

Claim 19 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest an optically active color filter, including in combination, a linear polarizing beamsplitter for polarizing and splitting light from a light source into a first polarized light and a second polarized light; an optically active means for rotating the first and second polarized light from the beamsplitter; a first adjustable polarizer for selecting a desired first color from the rotated first polarized light from the optically active means; and a second adjustable polarizer for selecting a desired second color from the rotated second polarized light from the optically active means. Claims 20-22 are dependent on Claim 19, and hence are allowable for at least the same reasons that Claim 19 is allowable.

Claim 7 is allowable over the cited art of record for at least the reason that the cited art of record fails to teach or reasonably suggest an optically active color filter, as generally set forth in Claims 1 and 6, and further wherein the first rotatable polarizer is circular shaped and has a cutout, wherein the first rotatable polarizer is disposed offset from a path of the rotated polarized light from the optically active device, and further wherein the radius of the first rotatable polarizer extends beyond the light path.


Conclusion

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arnel C. Lavarias whose telephone number is 571-272-2315. The examiner can normally be reached on M-F 9:30 AM - 6 PM EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Drew Dunn can be reached on 571-272-2312. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Arnel C. Lavarias
Patent Examiner
Group Art Unit 2872
2/1/05